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(12) United States Patent Lusk et al.

(54) SPHERICAL BISTABLE MECHANISM

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(56) References Cited

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U.S. PATENT DOCUMENTS

3,272,936 A * 6,215,081 B1		Potter 200/61.39 Jensen et al.
		Todd et al 29/893.33 Charvet 335/78
7,5-12,172 B2	3/2000	Charvet 333/70

* cited by examiner

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(57) ABSTRACT

A spherical bi-stable mechanism includes a planar bi-stable compliant member including an input and an output, and a spherical mechanism member coupled to the output of the first planar bi-stable compliant component. An actuation of the first planar bi-stable compliant member in a first plane is configured to cause the spherical mechanism member to be selectively positioned in a second plane.

22 Claims, 11 Drawing Sheets

